

## REMARKS

Continued examination is requested under 37 C.F.R. 1.114. This is a first amendment following the request for reexamination.

### I. Claim Changes

The wording of claim 1 was objected to in paragraph 2 on page 1 of the final Office Action.

The suggested change of "operable" to "configured to operate" has been made in claim 1.

For the foregoing reason withdrawal of the objection to the wording of claim 19 is respectfully requested.

Furthermore the wording of claim 19 has been changed to further distinguish from the cited prior art, Gonno, EP 0 876 023. Two additional steps d) and e) have been added to claim 19 and the wording of step c) has been simplified.

The simplified step c) now states that repeat transmissions of the message requested in step b) now only occur during a predetermined time interval. This restores the original wording of step c) in canceled claim 1, except for the insertion of the word "only". Basis for this wording is present on page 8, lines 8 to 10, of the originally filed specification. Of course it means that the repeat transmissions in response to the request from the terminal in step b) only continue during the predetermined time interval and are terminated when the

time interval ends – regardless of what has occurred at the requesting terminal in response to the repeat transmissions.

New step d) states that the repeat transmissions are halted within the predetermined time interval **when** a maximum number is reached. This condition is supported by the canceled original claim 10. It is a separate condition from the condition that the repeat transmissions occur only within a predetermined time interval because the predetermined maximum number may be sufficiently small so that retransmissions are halted prior to reaching the end of the time interval, e.g. halfway through the time interval.

New step e) states that the repeat transmissions are halted within the predetermined time interval **when** the terminal requesting the repeat transmission sends a positive acknowledgement to the central station. This is a separate condition and is based on canceled claim 15 and the specification, last line, page 7 to first line, page 8.

Step c) minimizes clogging of the communication system by an indefinite number of repeat transmissions in response to the request of step b) by restricting the repeat transmissions to a fixed predetermined time interval after the request has been made.

Step d) further reduces the number of repeat transmissions by limiting the number of repeat transmissions within the time interval to a predetermined maximum number in the situation in which the time interval is larger than repetition rate times the maximum number.

Step e) limits the number of repeat transmissions to one or a few

assuming that the terminal is not defective and unable to receive the particular message correctly for some reason, because the terminal will send an ACK when the message is received correctly. Step e) then provides the ultimate reduction in the number of repeat transmissions except in those cases. Of course if the terminal does not have means for generating ACK after a repeat request and only has means to generate a NACK or repeat request step e) will not effectively limit the number of repeat transmissions in the case of those embodiments.

A minor change was required in claim 23 to preserve antecedent basis for the term "acknowledgement".

## **II. Specification and Abstract**

The "Summary of Invention" section of the specification has changed to summarize the invention as it is now claimed in amended claim 19. The abstract has been changed in a similar manner.

## **III. The Anticipation Rejection based on Gonno**

Claims 1 to 18 were rejected under 35 U.S.C. 102 (b) as anticipated by Gonno (EP 000876023).

Claim 19 has now been amended to further distinguish the claimed invention from Gonno.

Gonno discloses a communication network for multicasting, such as an IP multicast network, in which message packets a, b, c, ,e are transmitted one after the other from a central station or transmitter to a plurality of receivers (terminals)

via an IP protocol (see fig. 5 and description as well as the claims 14 and 25). The group of message packets a, ..., e may be retransmitted a certain number of times. After a certain time period the receivers determine which of the message packets or messages has been received incorrectly or erroneously. Receivers that have received message packets erroneously or incorrectly send a NAK or retransmission request to the central station or transmitter that lists the message packets that should be retransmitted. The transmitter performs a logical sum of the repeat transmission requests to determine which message packets should be retransmitted. Obviously only message packets that were incorrectly received or not received by at least one receiver (terminal) will be retransmitted after the retransmission requests in the method of Gonno (see the detailed description of the method of transmission shown in fig.5 in Gonno). As a result of the logical sum or totaling of the requests for retransmission, the incorrectly transmitted messages packets are retransmitted (claim 14, claim 25; means for totaling; see the summary of invention in Gonno, for example the second and third paragraph of the summary or the "next to next to last paragraph" of the summary). However Gonno is silent regarding repeated retransmissions in response to a single request for retransmission.

In about the sixteenth paragraph of the detailed description Gonno states that his claimed method (claims 14 and 25) in which retransmission of a message takes place only when a NAK or retransmission request for that message is received by the transmitter or central station (transceiver) is better than a system using ACK or reception acknowledgement signals, because it

reduces "message traffic congestion" in the communication system. This is obviously because there should normally be much fewer NAK signals than ACK signals in the normal state of the communication system.

Clearly the intention of the claimed method of Gonno is to limit repeat transmissions by waiting until a repeat transmission request is made before performing a repeat transmission and only requesting repeat transmission if the message is erroneously received. The aim of the method and apparatus of Gonno is clearly to avoid "waste of network resources".

However Gonno does not teach or suggest a method in which "retransmission" or repeat transmission of a message occurs repeatedly and in response to a single NAK or repeat request, but in which the repeat transmissions are halted after a predetermined time interval (step c of claim 19). Both claims 14 and 25 of Gonno claim a method including a single retransmission step in response to a single repeat request. However according to the flow chart for receiver operation in fig. 7 retransmission of a lost or incorrectly received message is repeatedly requested an indefinitely large number of times by issuing repeated requests for retransmission if the message continues to be lost or incorrectly received by the requesting receiver (terminal) for some reason.

Step c of applicants' claim 19 puts a limit on the number of times an erroneously received or lost message can be retransmitted by the transmitter to avoid clogging the system when a terminal is faulty and cannot receive a particular message at all for some reason. Gonno discloses no such limit for retransmissions.

Dependent claim 7 of Gonno does disclose repeatedly transmitting a message over the communications network either a predetermined number of times or for a predetermined time period. However Gonno does not disclose performing a predetermined number of repeat transmissions or retransmissions in response to a NAK or repeat transmission request from a receiver (step c of claim 19). These are two different method steps performed for different reasons.

In the communication system of Gonno some of the receivers do not have the means to transmit a NAK or repeat transmission request to the central station. Gonno corrects for this deficiency by simply repeating transmissions of the data packets a, b, ... e for a predetermined number of times, which gives these types of receivers a better chance to receive the data packets. This transmission method feature corresponds to steps S2 to S4 of fig. 5 and is explained in the detailed description of fig. 5. That description does disclose that the data packets can be repeatedly transmitted for a predetermined number of times or over a predetermined time interval, but this repeated transmission of the message packets is not in response to a repeat transmission request from any of the receivers. Gonno does not disclose step c) of amended claim 19.

In other words, repeated transmissions are not the same as requested repeat retransmissions.

Unfortunately some of the statements are incorrect and contradictory in the second paragraph on page 19 of the "REMARKS" section of the previously filed amendment. The first sentence is correct but it should be noted that the "repeat transmissions" of that sentence are not in response to a repeat

transmission request from a receiver that detects a lost or faulty received message. Gonno does not disclose, as noted above, repeated "retransmissions" in response to a single repeat transmission request from a receiver.

In applicants' method it is assumed that all the terminals have means to issue a repeat transmission request when a message is lost or incorrectly received.

Second, Gonno does not disclose or suggest that the number of repeat transmissions in response to a single repeat transmission request is limited to a predetermined maximum number of transmissions within the predetermined time interval of step c). This is claimed in step d) of claim 19. It is different from limiting the repeat transmissions to a certain time interval after the NAK or repeat transmission request. By correctly selecting the maximum number, for example repeat transmissions would occur only twice or only over half of the time interval of step c). Thus step d) provides another limitation that is neither disclosed nor suggested anywhere in Gonno.

Similarly step e) also provides another limitation that is not disclose or suggested in Gonno. Gonno specifically teaches against using a communication system including an ACK or positive acknowledgement of correct receipt of a message in the last paragraph of his prior art section. However step e) teaches a method that differs from the method used in that type of conventional system because the ACK is only issued to acknowledge a successfully received message after a repeat request for the message has been issued. Thus messages are not acknowledge when successfully received during their first

transmission but only when successfully received after a first faulty reception or a first attempt in which they are lost. Thus the claimed method of claim 19 will not clog the system by requiring acknowledgement of all successfully received messages by all receivers.

It is well established that each and every limitation of a claimed invention must be disclosed in a single prior art reference in order to be able to reject the claimed invention under 35 U.S.C. 102 (b) based on the disclosures in the single prior art reference. See M.P.E.P. 2131 and also the opinion in *In re Bond*, 15 U.S.P.Q. 2nd 1566 (Fed. Cir. 1990).

In the case of the present application Gonno does not teach or suggest the feature of the claimed method of claim 19 that repeat transmission of a message occurs repeatedly in response to a single NAK or repeat request from a receiver, but that the repeat transmissions are halted after a predetermined time interval. In other words, Gonno does not teach or suggest the features of step c) of claim 19. Also Gonno does not teach or suggest the features of steps d) and e) of claim 19.

In addition with respect to the dependent claims 22 and 24, Gonno does teach that the receivers limit the number of retransmissions – but only when the receiver recognizes that a faulty or lost message has been correctly received (see fig. 7 and associated description in Gonno). However according to the disclosure related to fig. 7 retransmission requests will continue indefinitely if a message is never received correctly or is always lost during retransmission. In contrast to the statement in paragraph 1.2 the remarks on page 20 of the



previous amendment did not state that Gonno does not disclose appropriate means to identify missing messages. However the means for identifying missing messages of claim 24 are more specific than the somewhat generally described means 23 of verifying data of Gonno (fig. 6 of Gonno). Gonno does not disclose the details of the means for verifying, while the sequence numbers of applicants are an easily understood means for identifying a missing or lost message.

Thus Gonno does not disclose or suggest the features of claims 22 and 24.

For the foregoing reasons and because of the changes in the amended claims withdrawal of the rejection of amended claims 19 to 31 as anticipated under 35 U.S.C. 102 (b) by Gonno (EP 000876023) is respectfully requested.

Furthermore it is respectfully submitted that claims 19 to 31 should not be rejected under 35 U.S.C. 103 (a) as obvious over Gonno (EP 000876023).

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549 4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,



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